combustible value, and, if possible, to ensure a better utilisation of the, fuel. At tho lirst glance it appears as if this were to bo attained by moans of an increased decomposition of steam an by such moans tho hydrogen content of the gas would be correspondingly increased. Simultaneously, also the nitrogen content must 1m loworod and a gas be obtained which would bo lowor iu non-combustible substances. "Hydrogen has hithorto boon regarded as a very valuable heating gas, since, as will bo. remomhorod by everyone, until recently it has been practicable to obtain the highest temperatures only by means of tho oxy-hydrogou jet; and further, one always remembers that hydrogen possesses tho enormous combustible value of }M,(H)() calories per kilogramme. In connection with this figure, it should be borne in mind that hydrogen is very light, and therefore 1 kilogramme H occupies a very large volume. If one ealeuhttoH tho combustible value on the volume content, itn halo diminishes, and it turns out to be 2,629 calories per cubit*, mol.ro, and in considerably inferior to carbon monoxide (I^OGtt calories per cubic metre), and even more importantly inferior to the hydrocarbons (Gilt 8,600 and C2H4 M,18f> calories per cubic metro).

\YVll and good, tho gas before, considered proves that a high hydrogen content admits of superiorities and advantages, and it in worth while to investigate when these attain their limit,

One tiling in already clear, namely, that the production of hydrogen from water-vapour involves absorption of heat from tho 7,0110 in which reaction occurs and lowering of the reaction towpemlure. Thin temperature of reaction must, however, have a minimum amount if the process is to be free from dofectH. If it IH dot-ared to decompose more water than calculated above, there must be more heat available in the producer.

Thin cmn bo provided for in two ways:—

1, J$y allowing more relative production of GOa to CO.

2. Hy introducing additional heat into the producer by mciauH Hueh as mtperheatmg the steam or preheating che air Kuppliad thereto.

From tho aspects presented by the first-named method, one